UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,884	02/11/2004	Jack J. Reilly	IR3709 NP	3393

31684 7590 11/10/2008

ARKEMA INC.
PATENT DEPARTMENT - 26TH FLOOR
2000 MARKET STREET
PHILADELPHIA, PA 19103-3222

EXAMINER
FERGUSON, LAWRENCE D

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
11/10/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/776,884	REILLY ET AL.	
	Examiner	Art Unit	
	LAWRENCE D. FERGUSON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30,32 and 35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30, 32, 35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment mailed July 30, 2008.

Claims 1-2 were amended and claim 35 was added rendering claims 1-30, 32 and 35 pending in this case.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

New Matter - 35 U.S.C. 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 35 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 35, the phrase, 'each layer of said article has a thickness of greater than 1mm' is not supported by the specification.

The Examiner was not able to find support for the added limitation discussed above at the cited portions of the specification (page 6, paragraph [0027] line 4. At best paragraph 0027 teaches "suitable layer thickness can range, for example, from about 0.001 to about 100mm."

Claim Rejections – 35 USC § 103(a)

5. Claims 1-30, 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kito et al. (U.S. 5,585,425) as evidenced by http://hyperphysics.phy-astr.gsu.edu/hbase/tables/indrf.html.

Kito discloses an article comprising two or more layers fused together (in optical contact) having a colored and transparent layer or colored and opaque layer on a transparent (light transmitting) substrate (column 12, line 46-67 and column 13, lines 14-22) where the colored layer, experiences color changes (column 2, lines 64-65), as in claim 8. Kito discloses the composition may be colored and transparent by the addition of dye or transparent pigment in column 12 lines 49-52, which gives the colored light transmissive layer a principle color. Kito discloses an undercoat layer and/or topcoat layer can be applied to the article (column 13, lines 40-61) where both are made of methacrylate material (column 13, lines 44-52 and column 14, lines 1-12) as in claims 5 and 12. Colorant can be added to the undercoating and top coating layer (column 14, lines 13-17) and the thermochromatic color layer can be in a transparent state (column 12, lines 46-54) as in claims 6-7.

Because Kito discloses an article comprising two or more layers fused together (in optical contact) having a colored and transparent layer on a transparent (light transmitting) substrate with a colored undercoating and top coating, it is expected for at least one edge of the light transmitting layer to appear different in its color when viewed along the edge, which would change with respect to the viewing angle and appear to be a mix of the transparent colored layer, transparent layer and colored top or undercoating layer(s) (show angular multichromatic characteristics).

Although Kito does not specifically disclose the thickness as in claims 1 and 35, thickness is optimizable. It would have been obvious to one of ordinary skill in the art to optimize the components because discovering the optimum or workable range involves only routine skill in the art. The thickness directly affects durability of the composite material and discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Aller* 105 USPQ 233 and see *In re Boesch*, 617 USPQ 215.

Concerning claims 2-4, because Kito discloses an article comprising two or more layers fused together (in optical contact) having a colored and transparent layer on a transparent (light transmitting) substrate with a colored undercoating and top coating, it is expected for at least one edge of the light transmitting layer to appear different in its color when viewed along the edge, which would change with respect to the viewing angle and appear to be a mix of the transparent colored layer, transparent layer and colored top or undercoating layer(s). Although claim 2 states the observed color changes solely with respect to viewing angle, neither claim 1 nor claim 2 excludes other ways for the color to change because they disclose an article which comprises a color

change. The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., Invitrogen Corp. v. Biocrest Mfg., L.P., 327F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003).

The article is a glass or plastic, with glass or plastic layers (column 21, lines 1-47) comprising acrylic resin and polymethyl methacrylate (column 5, lines 55-65 and column 13,lines 44-52) as in claim 9-11. Kito discloses the article has a three-dimensional form which is applicable to toys and decorative goods (column 25, lines 1-5) as in claims 28-30. In claim 29, the phrase, “suitable for a display, consumer product, or decorative support for an object” constitutes a ‘capable of” limitation and that such a recitation that an element is ‘capable of’ performing a function is not a positive limitation but only requires the ability to so perform.

Concerning claim 13, because the thermochromatic color layer can be in a transparent state and it is adjacent to a transparent layer, there are at least two adjacent light transmitting layers in Kito’s article.

Concerning claims 14-15 and 23, the transparent substrate is made of methacrylate material and the undercoating is made of methacrylate material (column 13, lines 14-20 and 44-48). Because the transparent substrate and undercoating are made of similar materials, it appears the indices of refraction of these layers are within about 0.5 or less of each other. The index of refraction of methacrylate materials are conventionally greater than air, which has an index of refraction of about 1.0, as in claims 16-17. In claim 23, the phrase, “said two or more layers are coextruded”

introduce a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims.

Concerning claim 18, the phrase, "having a depth measured from said edge" appears to introduce a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims. Example 1 of Kito shows a film with a varying thickness of the thermochromatic color layer, giving the structure a varying depth.

In claims 19 and 20, the phrases, "by cuts through said layers" and "produced by coextrusion or fusion bonding of said layers" introduces process limitations to the product claims. In claim 23, the phrase, "wherein said two or more layers are coextruded" also introduces a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re

Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given no patentable weight in product claims.

Concerning claim 21, because Kito teachings a topcoating and undercoating layer, the layers they coat appear to be interlayer material.

Concerning claims 22 and 24-26, a solvent (liquid) is used to apply the thermochromic layer to the substrate layer, which is a ketone, such as actetone, which has a refractive index of about 1.36, according to *http://hyperphysics.phy-astr.gsu.edu/hbase/tables/indrf.html*. The index of refraction of the solvent appears to be lower than that of the thermochromic layer and substrate. The solvent used in Kito is construed as being an interlayer before the structure is dried. Applicant claims an interlayer of liquid, but does not claim how long the liquid interlayer needs to be present in the structure.

Because the article of Kito is a layered article used to laminate or conceal substrates (column 1, lines 12-20), it is interpreted as a sheet, as in claim 27.

Concerning claim 32, it appears the article has a photochromic visual effect as it seems to turns dark when turned a certain way or exposed to light and returns to its normal transparency when the angle or light is removed.

Response to Arguments

6. The rejections made under 35 U.S.C. 112, second paragraph, are withdrawn due to Applicant amending claims 12 and 14 to delete the term substantially.

Applicant's arguments of the rejection made under 35 U.S.C. 103(a) as being unpatentable over Kito et al. (U.S. 5,585,425) as evidenced by

http://hyperphysics.phy-astr.gsu.edu/hbase/tables/indrf.html has been considered but is unpersuasive. Applicant argues a prima facie case of obviousness has not been met because Kito fails to teach or suggest an angular multi-chromatic characteristics. Because Kito discloses an article comprising two or more layers fused together (in optical contact) having a colored and transparent layer on a transparent (light transmitting) substrate with a colored undercoating and top coating, it is expected for at least one edge of the light transmitting layer to appear different in its color when viewed along the edge, which would change with respect to the viewing angle and appear to be a mix of the transparent colored layer, transparent layer and colored top or undercoating layer(s) (show angular multichromatic characteristics).

Applicant further argues Kito does not disclose each layer having a thickness of greater than 0.1 to 100mm or a thickness of at least one light transmitting layer of from 1 to 100mm. Examiner maintains thickness is optimizable. It would have been obvious to one of ordinary skill in the art to optimize the components because discovering the optimum or workable range involves only routine skill in the art. The thickness directly affects durability of the composite material and discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Aller* 105 USPQ 233 and see *In re Boesch*, 617 USPQ 215.

Applicant further argues the cited art does not have a principle color of each layer. Kito discloses the composition may be colored and transparent by the addition of

dye or transparent pigment in column 12 lines 49-52, which gives the colored light transmissive layer a principle color.

Applicant argues Kito did not disclose a color change based solely on a viewing angle. Because Kito discloses an article comprising two or more layers fused together (in optical contact) having a colored and transparent layer on a transparent (light transmitting) substrate with a colored undercoating and top coating, it is expected for at least one edge of the light transmitting layer to appear different in its color when viewed along the edge, which would change with respect to the viewing angle and appear to be a mix of the transparent colored layer, transparent layer and colored top or undercoating layer(s). Although claim 2 states the observed color changes solely with respect to viewing angle, neither claim 1 nor claim 2 excludes other ways for the color to change because they disclose an article which comprises a color change. The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., Invitrogen Corp. v. Biocrest Mfg., L.P., 327F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003).

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is 571-272-1522. The examiner can normally be reached on Monday through Friday 9:00 AM – 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks, can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Lawrence Ferguson/
Patent Examiner, Art Unit 1794

/KEITH D. HENDRICKS/
Supervisory Patent Examiner, Art Unit 1794